REMARKS

In accordance with the foregoing, claims 2, 6, 10-12, and 16-17 are amended. No new matter is being presented, and approval and entry of the amended claims are respectfully requested.

Claims 1-2, 4-6, and 8-17 are pending and reconsideration is requested.

All rejections are traversed.

STATEMENT ON SUBSTANCE OF INTERVIEW

An in-person interview was conducted on February 18, 2004 between the Applicant's representative and the Examiner and the Primary Examiner. During the interview features that patentably distinguish the invention over the cited art were discussed. In addition, claim amendments to traverse the 35 U.S.C. §112 rejections were discussed. Further arguments presented are included in the discussion below.

Applicant thanks the Examiner and Primary Examiner for the opportunity to conduct the interview.

ENTRY OF AMENDMENT UNDER 37 C.F.R. §1.116

Applicant(s) request entry of this Rule 116 Response because it is believed that the amendment of claims puts this application into condition for allowance, and the amendments of claims 2, 6, 10-12, and 16-17 should not entail any further search by the Examiner since no new features are being added or no new issues are being raised.

As discussed during the in-person interview, claims 2, 6, 10-12, and 16-17 are amended to traverse the 35 U.S.C. 112 rejection and as suggested by the Examiner and the Primary Examiner.

ITEMS 9-14: REJECTION OF CLAIMS 1, 2, 4-6, AND 8-17 UNDER 35 U.S.C. §112, SECOND PARAGRAPH, AS BEING INDEFINITE

In items 9-14 of the current Action, the Examiner rejects claims 1, 2, 4-6, and 8-17 under 35 U.S.C. §112, second paragraph, as being indefinite. (Action at pages 3-5).

In item 10, the Examiner contends the limitation "another protocol on a transmission control protocol" recited in claims 2, 6, 10, 11, 16, and 17 is unclear. (Action at page 4). In item 11, the Examiner contends, regarding claims 2, 6, 10-12,16, and 17, the term "transmission control protocol" is unclear. In item 12, the Examiner contends that the limitation "the data obtained by converting . . . and by multiplexing. . . and transmitted to the network continuously" recited in claim 6 is unclear. In item 13 the Examiner contends the phrase "a multiplexing

protocol on a transmission control protocol" recited in claim 12 is unclear.

Independent claims 2, 6, 10-12, and 16-17 are amended herein as discussed at the in-person interview and as suggested by the Examiner and the Primary Examiner.

Claims 2, 6, 10-11, and 16-17 are amended to respectively recite, a communicating system, a computer-readable recording medium on which a program for a computer controlling a communication between a server and a client is recorded, using claim 2 as an example, include "a converting device converting a first protocol of the received data into a second protocol in an application protocol level where a size of a data transfer window in a transport protocol level can be changed, the second protocol allowing a larger amount of data to be transferred at a time; a multiplexing device multiplexing data of multiple connections converted by said converting device so that a connection with a converted window size in the transport protocol level can be used continuously; and a transmitting device transmitting data multiplexed by said multiplexing device to a network." (See, for example, page 21, lines 9-16 and pages 23-24, starting at line 10, an page 24, lines 12-23).

Claim 12 is amended to recite a communicating method "forming a virtual tunnel having a multiplexing protocol, where a size of a data transfer window in a transport protocol sent within the multiplexing protocol can be changed and a connection with a converted window size in the transport protocol can be used continuously, for hiding a network delay that takes place between a server and a client."

CONCLUSION

Applicant submits that claims 1, 2, 4-6, and 8-17 are in compliance with 35 U.S.C. §112, second paragraph and request withdrawal of the rejection.

ITEMS 16-17: REJECTION OF CLAIM 12 UNDER 35 U.S.C. §102(e) BY TOPOREK (U.S.P. 6,460,085)

The Examiner rejects claim 12, under 35 U.S.C. §102(e) as being anticipated by Toporek. (Action at pages 5-6).

Claim 12, as amended, recites a communicating method "forming a virtual tunnel having a multiplexing protocol, where a size of a data transfer window in a transport protocol sent within the multiplexing protocol can be changed and a connection with a converted window size in the transport protocol can be used continuously, for hiding a network delay that takes place between a server and a client; and continuously using the virtual tunnel as a communication bypass between the server and the client so as to increase a throughput between the server and the client." (Emphasis added).

Applicant submits that Toporek does not teach with such a continuous use to increase a throughput. While Toporek teaches, as the Examiner points out, (col. 7, lines 27-36) Toporek allowing high throughput, Applicant submits that such a passive allowance as taught by Toporek does not teach an active increasing as recited by claim 12.

Conclusion

Since features recited by claim 12 are not taught by the cited art, the rejection should be withdrawn and claim 12 allowed.

ITEMS 19-24: REJECTION OF INDEPENDENT CLAIMS 2, 6 10, 16, and 17 (AND RESPECTIVE DEPENDENT CLAIMS 1, 4, 9, AND 11) UNDER 35 U.S.C. §103 AS BEING UNPATENTABLE OVER TOPOREK ET AL. (U.S.P. 6,460,085) IN VIEW OF SRIDHAR (U.S.P. 6,266,701)

The Examiner rejects independent claims 2, 6, 10, 16 and 17 (and respective dependent clams 1, 4, 9 and 11) under 35 U.S.C §103 as being unpatentable over Toporek et al. in view of Sridhar. (Action at pages 7-10).

Claims 2, 6, 10-11 and 16-17, all as amended, respectively recite, a communicating system, and a computer-readable recording medium on which a program for a computer controlling a communication between a server and a client is recorded, using claim 2 as an example, including "a converting device converting a first protocol of the received data into a second protocol in an application protocol level where a size of a data transfer window in a transport protocol level can be changed, the second protocol allowing a larger amount of data to be transferred at a time; a multiplexing device multiplexing data of multiple connections converted by said converting device so that a connection with a converted window size in the transport protocol level can be used continuously; and a transmitting device transmitting data multiplexed by said multiplexing device to a network."

Recited Features Not Taught By The Cited Art

As, discussed during the in-person interview, Applicant submits that none of the cited art, teaches a use of converting a first protocol of the received data into a second protocol in an application protocol level and allowing a larger amount of data to be transferred.

In items 21 and 24, the Examiner contends it would be obvious to modify Toporek with Sridhar "to combine multiple connections into a single data stream as a means to reduce overhead," and to allow "multiple connections to be combined into a single data stream for transmission over the satellite network with reduced overhead." (Current Action at pages 8-10). In items 3-7 entitled Response to Arguments of the current Action, the Examiner contends that the recited "another (second) protocol allowing a larger amount of data to be transferred at a

time" is taught by Toporek since Toporek teaches allowing high throughput.

Applicant submits that such a "high throughput" is an *arguendo* arbitrary baseline to which the recited increase of a larger amount is added. That is, teaching a high throughput does not teach another protocol allowing a larger amount of data as the Examiner contends.

According to aspects of the present invention, an operation can be performed for a unit of data, on an application level that can include a large data volume. Once a protocol conversion is performed on the application level, the resulting data set can be divided as necessary to fit into packets for transmission of the data set. Accordingly, consistency of a data set is maintained and the content is unchanged.

According to aspects of the present invention an application protocol between the client and the client side gateway and between the server and the server side gateway are converted into another application level protocol for relaying the data between the two gateways. An application level protocol (e.g., FTP and HTTP) is a higher-level protocol which uses TCP in conducting a communication, and a TCP window of varying size may be employed under the application level protocol employed for relaying of the data. According to aspects of the present invention such a protocol conversion performed at the application level is not limited to converting data of one TCP packet into one packet of the targeted transfer protocol, and a number of packets may be combined into one packet.

On the other hand, as discussed during the in-person interview, Toporek merely teaches a conversion performed packet by packet and requires a consistency to be retained within each packet for each conversion. Toporek teaches a use of TCP (a transport level protocol) for communications held between a client and a gateway and between a server and a gateway, and use of XPT (as another transport level protocol) for communications held between gateways. Accordingly, Toporek employs a protocol conversion in which one TCP packet is replaced by one correspondent XPT packet. Therefore, in a system as taught by Toporek, it is not possible to apply a conversion in a direction in which data separately contained in a plurality of packets is combined into that of one packet.

Advantages of Present Invention

In an example anonymous FTP communication using a method as taught by Toporek a lengthy time is required of at least five return exchanges of packets between client and server is required. Toporek teaches requiring 1) Establishing connection in which a client sends one packet to the server and receives one packet confirming the reception of the packet back from the server. 2) Specifying user name in which the client sends one packet containing a user

name to the server and receives one packet confirming the reception of the packet back from the server. 3) Specifying password in which the client sends one packet containing a password to the server and receives one packet confirming the reception of the packet back from the server. 4) Specifying data communication port in which the client sends one packet containing an identifier of a data communication port to the server and receives one packet confirming the reception of the packet back from the server and 5) Transfer file specifying command in which the client sends one packet containing a transfer file name to the server and receives one packet confirming the reception of the packet and additional packets containing the content of the file back from the server.

In contrast to the cited art, according to the present invention, a length of a time required for packet exchange is reduced to a length required for only one return exchange. For example, a communication using anonymous FTP is first completed only between the client and a gateway and these packets are, then, converted into one packet of a relay protocol. This packet (e.g., containing the user name, password, data communication port identifier and transfer file name) is then transferred to a server side gateway. The server side gateway receives and disassembles the packet on behalf of the client for receiving the content of the transfer file, and converts packets containing the transfer file content into one relay protocol packet, and transfers the packet to the client side gateway. The client side gateway will transfer data that is contained in the packet received from the server side gateway to the client a number of times.

Thus, according aspects of the present invention, a required packet exchange through the connection between the client side gateway and the server side gateway, i.e., the connection associated generally with a long delay, is reduced by a single return exchange of relay packets. Thus, according to the present invention, a throughput can be many(e.g., 5 times) larger than that achievable by the method of Toporek.

Conclusion

Since features of the claims 2, 6, 10, 16 and 17 (and respective dependent clams 1, 4, 9 and 11) are not taught by the cited art, alone or in combination, the rejection should be withdrawn and claims allowed.

ITEMS 25-29 REJECTION OF DEPENDENT CLAIMS 5, 8, 13, AND 14 FOR OBVIOUSNESS UNDER 35 U.S.C. §103(a) OVER TOPOREK IN VIEW OF KIRBY (U.S. P. 6,671,285)

The Examiner rejects claims 5, 8, 13, and 14 under 35 U.S.C. §103(a) as being unpatentable over Toporek in view of Kirkby. (Action at pages 8-10).

Claims 5 and 8, using claim 5 as an example, recite a communicating system including a

charging device performing a charging process for a service provider of the server, wherein said receiving device receives a request from the client through the network, wherein said charging device determines whether or not the request from the client is a request to be issued to the server, wherein when the request from the client is the request to be issued to the server, said transmitting device transfers the request from the client to the server and said charging device charges the service provider.

Dependent claim 13 recites a communicating method charging a user of the client for a communication using the virtual tunnel. Dependent claim 14 recites a communicating method charging a service provider of the server for a communication using the virtual tunnel.

Regarding the rejection of clams 5 and 8, the Action concedes that Toporek fails to teach:

> . . . a charging device performing a charging process for a service provider of the server, wherein said charging device determines whether or not the request from the client is a request to be issued to the server, wherein when the request from the client is the request to be issued to the server, said charging device charges the service provider.

(Action at page 10)

Regarding the rejection of claims 13 and 14, the Action concedes that Toporek does not teach charging a user of the client or a service provider of the server for using the virtual tunnel.

Applicant submits that Kirkby does not teach that a charging device determines whether or not the request from the client is a request to be issued to the server. Kirkby merely teaches charging a fee associated with a use of an ATM network based on the size of an allocated bandwidth using a plurality of communication-carrier providers operating different ATM networks between separately located LANG of a pair. Kirkby teaches efficient routing only when the communications carrier providers are selected based on charged-fee information announced respectively from the communication carrier providers.

In item 7 Response to Arguments, the Examiner contends "in order for the proper party to be charged for use of the system, the charging device must determine which client sent the request as well as the server which the request is intended for."

While the Examiner's contention may *arguendo* be correct, the cited art, e.g., Kirby does not teach these features and the features are not obvious in combination of the cited art.

Applicant respectfully submits that the Examiner is contentions unsupported takings of official notice. As set forth in MPEP §2144.03 Taking of Official Notice Is Unsupported:

> It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. For example, assertions of technical facts . . . must always be supported by citation to some reference work recognized as standard in the pertinent art. In re Ahlert, 424 F.2d at 1091, 165 USPQ at 420-21.

Applicants request the Examiner support the taking of official notice with appropriate references or withdraw the rejection.

Conclusion

Since the Examiner's contention is unsupported and *prima facie* obviousness is not been established, the rejection should be withdrawn and claims 5, 8, 13, and 14 allowed.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

If there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: February 22, 2005

By: Paul W. Bobowiec

Paul W. Bobowiec
Registration No. 47,431

1201 New York Ave, N.W., Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501